SEQUENCE LISTING

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<120> ISOLATION OF DROSOPHILA AND HUMAN POLYNUCLEOTIDES ENCODING PAR-1 KINASE, POLYPEPTIDES ENCODED BY THE POLYNUCLEOTIDES AND METHODS UTILIZING THE POLYNUCLEOTIDES AND POLYPEPTIDES

<130> PP-016093.002/200130.525

<140> US
<141> 2001-07-30

<160> 22

<170> FastSEQ for Windows Version 4.0

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        35                  40                  45
Glu Gln Pro His Ile Gly Asn Tyr Arg Leu Leu Lys Thr Ile Gly Lys
    50                  55                  60
Gly Asn Phe Ala Lys Val Lys Leu Ala Arg His Ile Leu Thr Gly Arg
65                  70                  75                  80
Glu Val Ala Ile Lys Ile Ile Asp Lys Thr Gln Leu Asn Pro Thr Ser
                85                  90                  95
Leu Gln Lys Leu Phe Arg Glu Val Arg Ile Met Lys Ile Leu Asn His
            100                 105                 110
Pro Asn Ile Val Lys Leu Phe Glu Val Ile Glu Thr Glu Lys Thr Leu
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Tyr Leu Ile Met Glu Tyr Ala Ser Gly Gly Glu Val Phe Asp Tyr Leu
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Val Ala His Gly Arg Met Lys Glu Lys Glu Ala Arg Ser Lys Phe Arg
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Gln Ile Val Ser Ala Val Gln Tyr Cys His Gln Lys Arg Ile Val His
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Arg Asp Leu Lys Ala Glu Asn Leu Leu Leu Asp Ala Asp Met Asn Ile
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Lys Ile Ala Asp Phe Gly Phe Ser Asn Glu Phe Thr Val Gly Gly Lys
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Leu Asp Thr Phe Cys Gly Ser Pro Pro Tyr Ala Ala Pro Glu Leu Phe
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Gln Gly Lys Lys Tyr Asp Gly Pro Glu Val Asp Val Trp Ser Leu Gly
225                 230                 235                 240
Val Ile Leu Tyr Thr Leu Val Ser Gly Ser Leu Pro Phe Asp Gly Gln
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Arg Trp Ile Asn Ala Gly His Glu Glu Asp Glu Leu Lys Pro Phe Val
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Glu Pro Glu Leu Asp Ile Ser Asp Gln Lys Arg Ile Asp Ile Met Val
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Ala Lys Val Arg Pro Ser Ser Asp Leu Asn Asn Ser Thr Gly Gln Ser
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Pro His His Lys Val Gln Arg Ser Val Ser Ser Ser Gln Lys Gln Arg
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Arg Tyr Ser Asp His Ala Gly Pro Ala Ile Pro Ser Val Val Ala Tyr
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Pro Lys Arg Ser Gln Thr Ser Thr Ala Asp Ser Asp Leu Lys Glu Asp
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Tyr Asn Gly Pro Pro Ala Ser Pro Ser Leu Ser His Glu Ala Thr Pro
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Leu Ser Gln Thr Arg Ser Arg Gly Ser Thr Asn Leu Phe Ser Lys Leu
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Thr Ser Lys Leu Thr Arg Arg Leu Pro Thr Glu Tyr Glu Arg Asn Gly
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Arg Tyr Glu Gly Ser Ser Arg Asn Val Ser Ala Glu Gln Lys Asp Glu
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Thr Thr Ser Ser Met Asp Pro Gly Asp Met Met Arg Glu Ile Arg Lys
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Val Leu Asp Ala Asn Asn Cys Asp Tyr Glu Gln Arg Glu Arg Phe Leu
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Leu Phe Cys Val His Gly Asp Gly His Ala Glu Asn Leu Val Gln Trp
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Glu Met Glu Val Cys Lys Leu Pro Arg Leu Ser Leu Asn Gly Val Arg
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<212> PRT
<213> Homo sapiens

<400> 6

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Lys Val Lys Leu Ala Arg His Ile Leu Thr Gly Lys Glu Val Ala Val
        35                  40                  45
Lys Ile Ile Asp Lys Thr Gln Leu Asn Ser Ser Ser Leu Gln Lys Leu
    50                  55                  60
Phe Arg Glu Val Arg Ile Met Lys Val Leu Asn His Pro Asn Ile Val
65                  70                  75                  80
Lys Leu Phe Glu Val Ile Glu Thr Glu Lys Thr Leu Tyr Leu Val Met
                85                  90                  95
Glu Tyr Ala Ser Gly Gly Glu Val Phe Asp Tyr Leu Val Ala His Gly
            100                 105                 110
Arg Met Lys Glu Lys Glu Ala Arg Ala Lys Phe Arg Gln Ile Val Ser
        115                 120                 125
Ala Val Gln Tyr Cys His Gln Lys Phe Ile Val His Arg Asp Leu Lys
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                165                 170                 175
Cys Gly Ser Pro Pro Tyr Ala Ala Pro Glu Leu Phe Gln Gly Lys Lys
            180                 185                 190
Tyr Asp Gly Pro Glu Val Asp Val Trp Ser Leu Gly Val Ile Leu Tyr
        195                 200                 205
Thr Leu Val Ser Gly Ser Leu Pro Phe Asp Gly Gln Asn Leu Lys Glu
    210                 215                 220
Leu Arg Glu Arg Val Leu Arg Gly Lys Tyr Arg Ile Pro Phe Tyr Met
225                 230                 235                 240
Ser Thr Asp Cys Glu Asn Leu Leu Lys Lys Phe Leu Ile Leu Asn Pro
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Ser Lys Arg Gly Thr Leu Glu Gln Ile Met Lys Asp Arg Trp Met Asn
            260                 265                 270
Val Gly His Glu Asp Asp Glu Leu Lys Pro Tyr Val Glu Pro Leu Pro
        275                 280                 285
Asp Tyr Lys Asp Pro Arg Arg Thr Glu Leu Met Val Ser Met Gly Tyr
    290                 295                 300
Thr Arg Glu Glu Ile Gln Asp Ser Leu Val Gly Gln Arg Tyr Asn Glu
305                 310                 315                 320
Val Met Ala Thr Tyr Leu Leu Leu Gly Tyr Lys Ser Ser Glu Leu Glu
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Gly Asp Thr Ile Thr Leu Lys Pro Arg Pro Ser Ala Asp Leu Thr Asn
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Ser Ser Ala Pro Ser Pro Ser His Lys Val Gln Arg Ser Val Ser Ala
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Asn Pro Lys Gln Arg Arg Phe Ser Asp Gln Ala Gly Pro Ala Ile Pro
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Thr Ser Asn Ser Tyr Ser Lys Lys Thr Gln Ser Asn Asn Ala Glu Asn
385                 390                 395                 400
Lys Arg Pro Glu Glu Asp Arg Glu Ser Gly Arg Lys Ala Ser Ser Thr
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Ala Lys Val Pro Ala Ser Pro Leu Pro Gly Leu Glu Arg Lys Lys Thr
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Thr Pro Thr Pro Ser Thr Asn Ser Val Leu Ser Thr Ser Thr Asn Arg
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Ile Gln Asn Gly Lys Asp Ser Thr Ala Pro Gln Arg Val Pro Val Ala
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Ser Pro Ser Ala His Asn Ile Ser Ser Ser Gly Gly Ala Pro Asp Arg
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Thr Asn Phe Pro Arg Gly Val Ser Ser Arg Ser Thr Phe His Ala Gly
            500                 505                 510
Gln Leu Arg Gln Val Arg Asp Gln Gln Asn Leu Pro Tyr Gly Val Thr
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Pro Ala Ser Pro Ser Gly His Ser Gln Gly Arg Arg Gly Ala Ser Gly
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Ser Ile Phe Ser Lys Phe Thr Ser Lys Phe Val Arg Arg Asn Leu Asn
545                 550                 555                 560
Glu Pro Glu Ser Lys Asp Arg Val Glu Thr Leu Arg Pro His Val Val
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Pro Arg Ser Leu Arg Phe Thr Trp Ser Met Lys Thr Thr Ser Ser Met
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Glu Pro Asn Glu Met Met Arg Glu Ile Arg Lys Val Leu Asp Ala Asn
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Lys Leu Pro Arg Leu Ser Leu Asn Gly Val Arg Phe Lys Arg Ile Ser
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<211> 2222
<212> DNA
<213> Homo sapiens

<400> 7

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<211> 2222
<212> DNA
<213> Homo sapiens

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<210> 9
<211> 724
<212> PRT
<213> Homo sapiens

<400> 9

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        35                  40                  45
His Ile Gly Asn Tyr Arg Leu Leu Lys Thr Ile Gly Lys Gly Asn Phe
    50                  55                  60
Ala Lys Val Lys Leu Ala Arg His Ile Leu Thr Gly Lys Glu Val Ala
65                  70                  75                  80
Val Lys Ile Ile Asp Lys Thr Gln Leu Asn Ser Ser Ser Leu Gln Lys
                85                  90                  95
Leu Phe Arg Glu Val Arg Ile Met Lys Val Leu Asn His Pro Asn Ile
            100                 105                 110
Val Lys Leu Phe Glu Val Ile Glu Thr Glu Lys Thr Leu Tyr Leu Val
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Met Glu Tyr Ala Ser Gly Gly Glu Val Phe Asp Tyr Leu Val Ala His
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Gly Arg Met Lys Glu Lys Glu Ala Arg Ala Lys Phe Arg Gln Ile Val
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Ser Ala Val Gln Tyr Cys His Gln Lys Phe Ile Val His Arg Asp Leu
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Lys Ala Glu Asn Leu Leu Leu Asp Ala Asp Met Asn Ile Lys Ile Ala
            180                 185                 190
Asp Phe Gly Phe Ser Asn Glu Phe Thr Phe Gly Asn Lys Leu Asp Thr
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Phe Cys Gly Ser Pro Pro Tyr Ala Ala Pro Glu Leu Phe Gln Gly Lys
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Lys Tyr Asp Gly Pro Glu Val Asp Val Trp Ser Leu Gly Val Ile Leu
225                 230                 235                 240
Tyr Thr Leu Val Ser Gly Ser Leu Pro Phe Asp Gly Gln Asn Leu Lys
                245                 250                 255
Glu Leu Arg Glu Arg Val Leu Arg Gly Lys Tyr Arg Ile Pro Phe Tyr
            260                 265                 270
Met Ser Thr Asp Cys Glu Asn Leu Leu Lys Lys Phe Leu Ile Leu Asn
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Pro Ser Lys Arg Gly Thr Leu Glu Gln Ile Met Lys Asp Arg Trp Met
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Asn Val Gly His Glu Asp Asp Glu Leu Lys Pro Tyr Val Glu Pro Leu
305                 310                 315                 320
Pro Asp Tyr Lys Asp Pro Arg Arg Thr Glu Leu Met Val Ser Met Gly
                325                 330                 335
Tyr Thr Arg Glu Glu Ile Gln Asp Ser Leu Val Gly Gln Arg Tyr Asn
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Glu Val Met Ala Thr Tyr Leu Leu Leu Gly Tyr Lys Ser Ser Glu Leu
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Glu Gly Asp Thr Ile Thr Leu Lys Pro Arg Pro Ser Ala Asp Leu Thr
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Ala Asn Pro Lys Gln Arg Arg Phe Ser Asp Gln Ala Gly Pro Ala Ile
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Pro Thr Ser Asn Ser Tyr Ser Lys Lys Thr Gln Ser Asn Asn Ala Glu
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Asn Lys Arg Pro Glu Glu Asp Arg Glu Ser Gly Arg Lys Ala Ser Ser
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Thr Ala Lys Val Pro Ala Ser Pro Leu Pro Gly Leu Glu Arg Lys Lys
    450                 455                 460
Thr Thr Pro Thr Pro Ser Thr Asn Ser Val Leu Ser Thr Ser Thr Asn
465                 470                 475                 480
Arg Ser Arg Asn Ser Pro Leu Leu Glu Arg Ala Ser Leu Gly Gln Ala
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Ser Ile Gln Asn Gly Lys Asp Ser Thr Ala Pro Gln Arg Val Pro Val
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Ala Ser Pro Ser Ala His Asn Ile Ser Ser Ser Gly Gly Ala Pro Asp
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Arg Thr Asn Phe Pro Arg Gly Val Ser Ser Arg Ser Thr Phe His Ala
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Gly Gln Leu Arg Gln Val Arg Asp Gln Gln Asn Leu Pro Tyr Gly Val
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Thr Pro Ala Ser Pro Ser Gly His Ser Gln Gly Arg Arg Gly Ala Ser
                565                 570                 575
Gly Ser Ile Phe Ser Lys Phe Thr Ser Lys Phe Val Arg Arg Asn Leu
            580                 585                 590
Asn Glu Pro Glu Ser Lys Asp Arg Val Glu Thr Leu Arg Pro His Val
        595                 600                 605
Val Gly Ser Gly Gly Asn Asp Lys Glu Lys Glu Glu Phe Arg Glu Ala
    610                 615                 620
Lys Pro Arg Ser Leu Arg Phe Thr Trp Ser Met Lys Thr Thr Ser Ser
625                 630                 635                 640
Met Glu Pro Asn Glu Met Met Arg Glu Ile Arg Lys Val Leu Asp Ala
                645                 650                 655
Asn Ser Cys Gln Ser Glu Leu His Glu Lys Tyr Met Leu Leu Cys Met
            660                 665                 670
His Gly Thr Pro Gly His Glu Asp Phe Val Gln Trp Glu Met Glu Val
        675                 680                 685
Cys Lys Leu Pro Arg Leu Ser Leu Asn Gly Val Arg Phe Lys Arg Ile
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<211> 2706
<212> DNA
<213> Homo sapiens

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agacagaaca tccccccggtg tagaaactcc attacgtcag caacagatga acagcctcac 180

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<210> 11
<211> 2706
<212> DNA
<213> Homo sapiens

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<211> 795
<212> PRT
<213> Homo sapiens

<400> 12
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            20                  25                  30
Lys Ser Ser Ser Arg Gln Asn Ile Pro Arg Cys Arg Asn Ser Ile Thr
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    50                  55                  60
Thr Ile Gly Lys Gly Asn Phe Ala Lys Val Lys Leu Ala Arg His Val
65                  70                  75                  80
Leu Thr Gly Arg Glu Val Ala Val Lys Ile Ile Asp Lys Thr Gln Leu
                85                  90                  95
Asn Pro Thr Ser Leu Gln Lys Leu Phe Arg Glu Val Arg Ile Met Lys
            100                 105                 110
Ile Leu Asn His Pro Asn Ile Val Lys Leu Phe Glu Val Ile Glu Thr
        115                 120                 125
Glu Lys Thr Leu Tyr Leu Val Met Glu Tyr Ala Ser Gly Gly Glu Val
    130                 135                 140
Phe Asp Tyr Leu Val Ala His Gly Arg Met Lys Glu Lys Glu Ala Arg
145                 150                 155                 160
Ala Lys Phe Arg Gln Ile Val Ser Ala Val Gln Tyr Cys His Gln Lys
                165                 170                 175
Tyr Ile Val His Arg Asp Leu Lys Ala Glu Asn Leu Leu Leu Asp Gly
            180                 185                 190
Asp Met Asn Ile Lys Ile Ala Asp Phe Gly Phe Ser Asn Glu Phe Thr
        195                 200                 205
Val Gly Asn Lys Leu Asp Thr Phe Cys Gly Ser Pro Pro Tyr Ala Ala
    210                 215                 220
Pro Glu Leu Phe Gln Gly Lys Lys Tyr Asp Gly Pro Glu Val Asp Val
225                 230                 235                 240
Trp Ser Leu Gly Val Ile Leu Tyr Thr Leu Val Ser Gly Ser Leu Pro
                245                 250                 255
Phe Asp Gly Gln Asn Leu Lys Glu Leu Arg Glu Arg Val Leu Arg Gly
            260                 265                 270
Lys Tyr Arg Ile Pro Phe Tyr Met Ser Thr Asp Cys Glu Asn Leu Leu
        275                 280                 285
Lys Lys Leu Leu Val Leu Asn Pro Ile Lys Arg Gly Ser Leu Glu Gln
    290                 295                 300
Ile Met Lys Asp Arg Trp Met Asn Val Gly His Glu Glu Glu Glu Leu
305                 310                 315                 320
Lys Pro Tyr Thr Glu Pro Asp Pro Asp Phe Asn Asp Thr Lys Arg Ile
                325                 330                 335
Asp Ile Met Val Thr Met Gly Phe Ala Arg Asp Glu Ile Asn Asp Ala
            340                 345                 350
Leu Ile Asn Gln Lys Tyr Asp Glu Val Met Ala Thr Tyr Ile Leu Leu
        355                 360                 365
Gly Arg Lys Pro Pro Glu Phe Glu Gly Gly Glu Ser Leu Ser Ser Gly
    370                 375                 380
Asn Leu Cys Gln Arg Ser Arg Pro Ser Ser Asp Leu Asn Asn Ser Thr
385                 390                 395                 400
Leu Gln Ser Pro Ala His Leu Lys Val Gln Arg Ser Ile Ser Ala Asn
                405                 410                 415
Gln Lys Gln Arg Arg Phe Ser Asp His Ala Gly Pro Ser Ile Pro Pro
            420                 425                 430
Ala Val Ser Tyr Thr Lys Arg Pro Gln Ala Asn Ser Val Glu Ser Glu
        435                 440                 445
Gln Lys Glu Glu Trp Asp Lys Asp Val Ala Arg Lys Leu Gly Ser Thr
    450                 455                 460
Thr Val Gly Ser Lys Ser Glu Met Thr Ala Ser Pro Leu Val Gly Pro
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465                 470                 475                 480
Glu Arg Lys Lys Ser Ser Thr Ile Pro Ser Asn Asn Val Tyr Ser Gly
                485                 490                 495
Gly Ser Met Ala Arg Arg Asn Thr Tyr Val Cys Glu Arg Thr Thr Asp
            500                 505                 510
Arg Tyr Val Ala Leu Gln Asn Gly Lys Asp Ser Ser Leu Thr Glu Met
        515                 520                 525
Ser Val Ser Ser Ile Ser Ser Ala Gly Ser Ser Val Ala Ser Ala Val
    530                 535                 540
Pro Ser Ala Arg Pro Arg His Gln Lys Ser Met Ser Thr Ser Gly His
545                 550                 555                 560
Pro Ile Lys Val Thr Leu Pro Thr Ile Lys Asp Gly Ser Glu Ala Tyr
                565                 570                 575
Arg Pro Gly Thr Thr Gln Arg Val Pro Ala Ala Ser Pro Ser Ala His
            580                 585                 590
Ser Ile Ser Thr Ala Thr Pro Asp Arg Thr Arg Phe Pro Arg Gly Ser
        595                 600                 605
Ser Ser Arg Ser Thr Phe His Gly Glu Gln Leu Arg Glu Arg Arg Ser
    610                 615                 620
Val Ala Tyr Asn Gly Pro Pro Ala Ser Pro Ser His Glu Thr Gly Ala
625                 630                 635                 640
Phe Ala His Ala Arg Arg Gly Thr Ser Thr Gly Ile Ile Ser Lys Ile
                645                 650                 655
Thr Ser Lys Phe Val Arg Arg Asp Pro Ser Glu Gly Glu Ala Ser Gly
            660                 665                 670
Arg Thr Asp Thr Ser Arg Ser Thr Ser Gly Glu Pro Lys Glu Arg Asp
        675                 680                 685
Lys Glu Glu Gly Lys Asp Ser Lys Pro Arg Ser Leu Arg Phe Thr Trp
    690                 695                 700
Ser Met Lys Thr Thr Ser Ser Met Asp Pro Asn Asp Met Met Arg Glu
705                 710                 715                 720
Ile Arg Lys Val Leu Asp Ala Asn Asn Cys Asp Tyr Glu Gln Lys Glu
                725                 730                 735
Arg Phe Leu Leu Phe Cys Val His Gly Asp Ala Arg Gln Asp Ser Leu
            740                 745                 750
Val Gln Trp Glu Met Glu Val Cys Lys Leu Pro Arg Leu Ser Leu Asn
        755                 760                 765
Gly Val Arg Phe Lys Arg Ile Ser Gly Thr Ser Ile Ala Phe Lys Asn
    770                 775                 780
Ile Ala Ser Lys Ile Ala Asn Glu Leu Lys Leu
785                 790                 795
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<213> Artificial Sequence

<220>
<223> Antisense oligonucleotide

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<210> 14

<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense oligonucleotide

<400> 14
tgcaaaacac cgtcaggagg tatgc 25

<210> 15
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense oligonucleotide

<400> 15
tgaggtctga gcgtctccac tcgg 24

<210> 16
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense oligonucleotide

<400> 16
ggctcacctc tgcgagtctg gagt 24

<210> 17
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense oligonucleotide

<400> 17
gagaatgacg cccagactcc acaca 25

<210> 18
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense oligonucleotide

<400> 18
acacacctca gacccgcagt aagag 25

<210> 19
<211> 3154
<212> DNA
<213> Drosophilia sp.

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tagaaaccca ttgggcattt gactactttt aagcaccgaa acctgaaaga ctcccgaaaa 180
tactcgaatc tcacgtgcag aatctctaag aatccctatt ggactgttta aaaatatgtc 240
gacagcaatg cgcaccacac tgcagtcagt tcctgaggcc ctgccagcgg atagcgtgtc 300
caatggcaca gcatccaatg tagcagcacc ggcggcgcca gtatcgagcg caacaaacgc 360
ggtgccacca ctggccgccg tctccagcac aaccgccacc tacgccacca actcgatcag 420
cacatcctcg cattcggtca aggatcagca gcagcaacag cagcagcagc agcatgattc 480
ggccaatgca aacattgtgt cactgccacc aacgacaacg ccagtcgcca acactaacac 540
aatgatgccc attgtaacgt cctcgaattc ggccaccagc aatagcactg cggccacgcc 600
cacgccggcc tcgggggcgg cagcgacagg tggagtggga tcagtttccc agggtccagc 660
gaccgtttcg gcgtcagcgg ccaacaccaa tcactcgcac cagcacagcc accaacacca 720
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ggtggtggcg agctcagcga ttaaccacca ccatcaccac acccccggca gtggagtggc 840
gcccaccgtc aacaagaacg tgcttagcac ccactcggct catccctccg cgatcaagca 900
acgaacctcg tccgccaagg gttcgcctaa catgcaaatg cggagtagtg ctcctatgcg 960
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aacaccgaca acgttgagtt ccattgcgtt aattgaaatt tcacaaatac gcctatgttt 3060
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atatttaaaa gtaaagcaac cacaaacaga aatt 3154

<210> 20
<211> 3154
<212> DNA
<213> Drosophila sp.

<400> 20
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atctttgggt aacccgtaaa ctgatgaaaa ttcgtggctt tggactttct gagggctttt 180
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gtgtaggagc gtaagccagt tcctagtcgt cgtcgttgtc gtcgtcgtcg tcgtactaag 480
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tataaatttt catttcgttg gtgtttgtct ttaa 3154

<210> 21
<211> 832
<212> PRT
<213> Drosophila sp.

<400> 21

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Pro Ala Asp Ser Val Ser Asn Gly Thr Ala Ser Asn Val Ala Ala Pro
            20                  25                  30
Ala Ala Pro Val Ser Ser Ala Thr Asn Ala Val Pro Pro Leu Ala Ala
        35                  40                  45
Val Ser Ser Thr Thr Ala Thr Tyr Ala Thr Asn Ser Ile Ser Thr Ser
    50                  55                  60
Ser His Ser Val Lys Asp Gln Gln Gln Gln Gln Gln Gln Gln Gln His
65                  70                  75                  80
Asp Ser Ala Asn Ala Asn Ile Val Ser Leu Pro Pro Thr Thr Thr Pro
                85                  90                  95
Val Ala Asn Thr Asn Thr Met Met Pro Ile Val Thr Ser Ser Asn Ser
            100                 105                 110
Ala Thr Ser Asn Ser Thr Ala Ala Thr Pro Thr Pro Ala Ser Gly Ala
        115                 120                 125
Ala Ala Thr Gly Gly Val Gly Ser Val Ser Gln Gly Pro Ala Thr Val
    130                 135                 140
Ser Ala Ser Ala Ala Asn Thr Asn His Ser His Gln His Ser His Gln
145                 150                 155                 160
His His His His Val Ala Asn Asn Met Thr Thr Asp Gly Ala Arg Leu
                165                 170                 175
Ser Ser Asn Asn Ser Ala Val Val Ala Ser Ser Ala Ile Asn His His
            180                 185                 190
His His His Thr Pro Gly Ser Gly Val Ala Pro Thr Val Asn Lys Asn
        195                 200                 205
Val Leu Ser Thr His Ser Ala His Pro Ser Ala Ile Lys Gln Arg Thr
    210                 215                 220
Ser Ser Ala Lys Gly Ser Pro Asn Met Gln Met Arg Ser Ser Ala Pro
225                 230                 235                 240
Met Arg Trp Arg Ala Thr Glu Glu His Ile Gly Lys Tyr Lys Leu Ile
                245                 250                 255
Lys Thr Ile Gly Lys Gly Asn Phe Ala Lys Val Lys Leu Ala Lys His
            260                 265                 270
Leu Pro Thr Gly Lys Glu Val Ala Ile Lys Ile Ile Asp Lys Thr Gln
        275                 280                 285
```

```
Leu Asn Pro Gly Ser Leu Gln Lys Leu Phe Arg Glu Val Arg Ile Met
    290                 295                 300
Lys Met Leu Asp His Pro Asn Ile Val Lys Leu Phe Gln Val Ile Glu
305                 310                 315                 320
Thr Glu Lys Thr Leu Tyr Leu Ile Met Glu Tyr Ala Ser Gly Gly Glu
                325                 330                 335
Val Phe Asp Tyr Leu Val Leu His Gly Arg Met Lys Glu Lys Glu Ala
            340                 345                 350
Arg Val Lys Phe Arg Gln Ile Val Ser Ala Val Gln Tyr Cys His Gln
        355                 360                 365
Lys Arg Ile Ile His Arg Asp Leu Lys Ala Glu Asn Leu Leu Leu Asp
    370                 375                 380
Ser Glu Leu Asn Ile Lys Ile Ala Asp Phe Gly Phe Ser Asn Glu Phe
385                 390                 395                 400
Thr Pro Gly Ser Lys Leu Asp Thr Phe Cys Gly Ser Pro Pro Tyr Ala
                405                 410                 415
Ala Pro Glu Leu Phe Gln Gly Lys Lys Tyr Asp Gly Pro Glu Val Asp
            420                 425                 430
Val Trp Ser Leu Gly Val Ile Leu Tyr Thr Leu Val Ser Gly Ser Leu
        435                 440                 445
Pro Phe Asp Gly Ser Thr Leu Arg Glu Leu Arg Glu Arg Val Leu Arg
    450                 455                 460
Gly Lys Tyr Arg Ile Pro Phe Tyr Met Ser Thr Asp Cys Glu Asn Leu
465                 470                 475                 480
Leu Arg Lys Phe Leu Val Leu Asn Pro Ala Lys Arg Ala Ser Leu Glu
                485                 490                 495
Thr Ile Met Gly Asp Lys Trp Met Asn Met Gly Phe Glu Glu Asp Glu
            500                 505                 510
Leu Lys Pro Tyr Ile Glu Pro Lys Ala Asp Leu Ala Asp Pro Lys Arg
        515                 520                 525
Ile Glu Ala Leu Val Ala Met Gly Tyr Asn Arg Ser Glu Ile Glu Ala
    530                 535                 540
Ser Leu Ser Gln Val Arg Tyr Asp Asp Val Phe Ala Thr Tyr Leu Leu
545                 550                 555                 560
Leu Gly Arg Lys Ser Thr Asp Pro Glu Ser Asp Gly Ser Arg Ser Gly
                565                 570                 575
Ser Ser Leu Ser Leu Arg Asn Ile Ser Gly Asn Asp Ala Gly Ala Asn
            580                 585                 590
Ala Gly Ser Ala Ser Val Gln Ser Pro Thr His Arg Gly Val His Arg
        595                 600                 605
Ser Ile Ser Ala Ser Ser Thr Lys Pro Ser Arg Arg Ala Ser Ser Gly
    610                 615                 620
Ala Glu Thr Leu Arg Val Gly Pro Thr Asn Ala Ala Ala Thr Val Ala
625                 630                 635                 640
Ala Ala Thr Gly Ala Val Gly Ala Val Asn Pro Ser Asn Asn Tyr Asn
                645                 650                 655
Ala Ala Gly Ser Ala Ala Asp Arg Ala Ser Val Gly Ser Asn Phe Lys
            660                 665                 670
Arg Gln Asn Thr Ile Asp Ser Ala Thr Ile Lys Glu Asn Thr Ala Arg
        675                 680                 685
Leu Ala Ala Gln Asn Gln Arg Pro Ala Ser Ala Thr Gln Lys Met Leu
    690                 695                 700
Thr Thr Ala Asp Thr Thr Leu Asn Ser Pro Ala Lys Pro Arg Thr Ala
705                 710                 715                 720
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Thr Lys Tyr Asp Pro Thr Asn Gly Asn Arg Thr Val Ser Gly Thr Ser
                725                 730                 735
Gly Ile Ile Pro Arg Arg Ser Thr Thr Leu Tyr Glu Lys Thr Ser Ser
            740                 745                 750
Thr Glu Lys Thr Asn Val Ile Pro Ala Glu Thr Lys Met Ala Ser Ala
        755                 760                 765
Val Lys Ser Ser Arg His Phe Pro Arg Asn Val Pro Ser Arg Ser Thr
    770                 775                 780
Phe His Ser Gly Gln Thr Arg Ala Arg Asn Asn Thr Ala Leu Glu Tyr
785                 790                 795                 800
Ser Gly Thr Ser Gly Ala Ser Gly Asp Ser Ser His Pro Gly Arg Met
                805                 810                 815
Ser Phe Phe Ser Lys Leu Ser Ser Arg Phe Ser Lys Arg Pro Asn Gln
            820                 825                 830
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<210> 22
<211> 36
<212> PRT
<213> Homo sapiens

<400> 22

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Gln Arg Leu Gln Val Arg Lys Lys Pro Gln Arg Arg Lys Lys Arg Ala
 1               5                  10                  15
Pro Ser Met Ser Arg Thr Ser Ser Tyr Ser Ser Ile Thr Asp Ser Thr
            20                  25                  30
Met Ser Leu Asn
        35
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